

It is noted that claims 16, 19 and 21-63 were pending in the application prior to the present amendment.

The examiner is respectfully requested to cancel claim 22.

The examiner is further respectfully requested to amend claims 16, 19, 23, 24, 27, 36, 37, 43, 50, and 51, as indicated in the listing of all claims, which follows.

Listing of Claims

Claims 1-15 (cancelled)

Claim 16 (currently amended): An AA7000 series aluminum alloy having improved as-cast surface quality, said alloy is comprised of from about 5 to about 5,000 100 ppm calcium, from about 0.001% to about 0.25% grain refiners, and being essentially beryllium-free.

Claims 17-18 (cancelled)

Claim 19 (currently amended): The aluminum alloy as claimed in claim 16 wherein the grain refiners are selected from the group consisting of Ti, Zr, Sr, B and C.

Claim 20 (cancelled)

Claim 21 (original): An ingot cast from the aluminum alloy of claim 16.

Claim 22 (cancelled)

Claim 23 (currently amended): The alloy of claim 16, wherein the concentration of calcium is from about 10 to about 750 100 ppm calcium.

Claim 24 (currently amended): The alloy of claim 16, wherein the concentration of calcium is from about 15 to about 500 100 ppm calcium.

Claim 25 (previously presented): The alloy of claim 16, wherein the concentration of grain refiners is from about 0.1 to about 0.25 wt.%.

Claim 26 (previously presented): The alloy of claim 16, wherein titanium is a grain refiner and the concentration of titanium is from about 0.0002 to about 0.20 wt.%.

Claim 27 (currently amended): The alloy of claim 16, wherein titanium is a grain refiner and the concentration of titanium is from about 0.0003 to about 0.10 wt.%.

Claim 28 (previously presented): The alloy of claim 16, wherein boron is a grain refiner and the concentration of boron is about from 0.0001 to about 0.03 wt.%.

Claim 29 (previously presented): The alloy of claim 16, wherein boron is a grain refiner and the concentration of boron is about from about 0.0001 to about 0.01 wt.%.

Claim 30 (previously presented): The alloy of claim 16, wherein boron is a grain refiner and the concentration of boron is about from about 0.0003 to about 0.005 wt.%.

Claim 31 (previously presented): The alloy of claim 16, wherein carbon is a grain refiner and the concentration of carbon is about from about 0.00001 to about 0.001 wt.%.

Claim 32 (previously presented): The alloy of claim 16, wherein carbon is a grain refiner and the concentration of carbon is about from about 0.000015 to about 0.0004 wt.%.

Claim 33 (previously presented): The alloy of claim 16, wherein titanium is a grain refiner at a concentration from about 0.0002 to about 0.20 wt.% and boron is a grain refiner at a concentration from about 0.0001 to about 0.03 wt.%.

Claim 34 (previously presented): The alloy of claim 16, wherein titanium is a grain refiner at a concentration from about 0.0002 to about 0.20 wt.% and carbon is a grain refiner at a concentration from about 0.00001 to about 0.001 wt.%.

Claim 35 (previously presented): The alloy of claim 34, wherein the concentration of calcium is from about 8 ppm to about 14 ppm.

Claim 36 (currently amended): An AA7050-type aluminum alloy having improved as-cast surface quality, said alloy comprising from about 5 to about 5,000 100 ppm calcium, from about 0.001 to about 0.25 wt.% grain refiners, and being essentially beryllium-free.

Claim 37 (currently amended): The alloy of claim 36, wherein the concentration of calcium is from about 15 to about 500 100 ppm calcium.

Claim 38 (previously presented): The alloy of claim 36, wherein the grain refiners are selected from the group consisting of titanium, strontium, boron and carbon.

Claim 39 (previously presented): The alloy of claim 36, wherein titanium is a grain refiner at a concentration from about 0.0002 to about 0.20 wt.% and boron is a grain refiner at a concentration from about 0.0001 to about 0.03 wt.%.

Claim 40 (previously presented): The alloy of claim 36, wherein titanium is a grain refiner at a concentration from about 0.0002 to about 0.20 wt.% and carbon is a grain refiner at a concentration from about 0.00001 to about 0.001 wt.%.

Claim 41 (previously presented): The alloy of claim 40, wherein the concentration of calcium is from about 8 ppm to about 14 ppm.

Claim 42 (previously presented): An ingot cast from the aluminum alloy of claim 36.

Claim 43 (currently amended): An aluminum alloy having improved as-cast surface quality, said alloy consisting essentially of: about 5.7 to about 6.7 wt.% zinc, about 2.0 to about 2.6 wt.% copper, about 1.9 to about 2.6 wt.% magnesium, about 0.08 to 0.15 ~~about wt %~~ zirconium, about 5 to about 5,000 ppm calcium, about 0.001 to about 0.25 wt.% grain refiners, the balance essentially aluminum with incidental elements and impurities, and being essentially beryllium-free.

Claim 44 (previously presented): The alloy of claim 43, wherein the concentration of calcium is from about 15 to about 500 ppm calcium.

Claim 45 (previously presented): The alloy of claim 43, wherein the grain refiners are selected from the group consisting of titanium, strontium, boron and carbon.

Claim 46 (previously presented): The alloy of claim 43, wherein titanium is a grain refiner at a concentration from about 0.0002 to about 0.20 wt.% and boron is a grain refiner at a concentration from about 0.0001 to about 0.03 wt.%.

Claim 47 (previously presented): The alloy of claim 43, wherein titanium is a grain refiner at a concentration from about 0.0002 to about 0.20 wt.% and carbon is a grain refiner at a concentration from about 0.00001 to about 0.001 wt.%.

Claim 48 (previously presented): The alloy of claim 47, wherein the concentration of calcium is from about 8 ppm to about 14 ppm.

Claim 49 (previously presented): An ingot cast from the aluminum alloy of claim 43.

Claim 50 (currently amended): An AA7055-type aluminum alloy having improved as-cast surface quality, said alloy comprising from about 5 to about 5,000 100 ppm calcium, from about 0.001 to about 0.25 wt.% grain refiners, and being essentially beryllium-free.

Claim 51 (currently amended): The alloy of claim 50, wherein the concentration of calcium is from about 15 to about 500 100 ppm calcium.

Claim 52 (previously presented): The alloy of claim 50, wherein the grain refiners are selected from the group consisting of titanium, strontium, boron and carbon.

Claim 53 (previously presented): The alloy of claim 50, wherein titanium is a grain refiner at a concentration from about 0.0002 to about 0.20 wt.% and boron is a grain refiner at a concentration from about 0.0001 to about 0.03 wt.%.

Claim 54 (previously presented): The alloy of claim 50, wherein titanium is a grain refiner at a concentration from about 0.0002 to about 0.20 wt.% and carbon is a grain refiner at a concentration from about 0.00001 to about 0.001 wt.%.

Claim 55 (previously presented): The alloy of claim 54, wherein the concentration of calcium is from about 8 ppm to about 14 ppm.

Claim 56 (previously presented): An ingot cast from the aluminum alloy of claim 50.

Claim 57 (previously presented): An aluminum alloy having improved as-cast surface quality, said alloy consisting essentially of: about 7.6 to about 8.4 wt.% zinc, about 2.0 to about 2.6 wt.% copper, about 1.8 to about 2.3 wt.% magnesium, about 0.08 to about 0.25 zirconium, about 5 to about 5,000 ppm calcium, about 0.001 to about 0.25 wt.% grain refiners, the balance essentially aluminum with incidental elements and impurities, and being essentially beryllium-free.

Claim 58 (previously presented): The alloy of claim 57, wherein the concentration of calcium is from about 15 to about 500 ppm calcium.

Claim 59 (previously presented): The alloy of claim 57, wherein the grain refiners are selected from the group consisting of titanium, strontium, boron and carbon.

Claim 60 (previously presented): The alloy of claim 57, wherein titanium is a grain refiner at a concentration from about 0.0002 to about 0.20 wt.% and boron is a grain refiner at a concentration from about 0.0001 to about 0.03 wt.%.

Claim 61 (previously presented): The alloy of claim 57, wherein titanium is a grain refiner at a concentration from about 0.0002 to about 0.20 wt.% and carbon is a grain refiner at a concentration from about 0.00001 to about 0.001 wt.%.

Claim 62 (previously presented): The alloy of claim 61, wherein the concentration of calcium is from about 8 ppm to about 14 ppm.

Claim 63 (previously presented): An ingot cast from the aluminum alloy of claim 57.